

AMENDMENTS TO THE CLAIMS

1. (Currently amended) An intra chip or intra multi-chip module on a shared substrate multi-wavelength optical communication system comprising:
a number of emitters each of which emits radiation at a different wavelength;
a plurality of detectors each of which senses radiation at a different wavelength corresponding to the radiation from one of said emitters; and
a shared waveguide including a scattering medium configured with dispersive particles for transmitting emitted radiation to said detectors;
wherein each emitter includes a scattering grating for redirecting the emitted radiation laterally through said shared waveguide.
2. (Original) The multi-wavelength optical communication system of claim 1 in which said emitter includes a vertical cavity surface emitting laser.
3. (Cancelled)
4. (Original) The multi-wavelength optical communication system of claim 1 in which a said detector includes a filter for selectively passing one of said wavelengths from said emitters.
5. (Original) The multi-wavelength optical communication system of claim 4 in which said filter includes a Bragg grating.
6. (Original) The multi-wavelength optical communication system of claim 1 in which said shared waveguide scatters the lateral leakage radiation from said emitters.
7. (Original) The multi-wavelength optical communication system of claim 1 in which said emitter includes an LED.
8. (Original) The multi-wavelength optical communication system of claim 1 in which said emitter includes an edge emitting laser.

9. (Currently amended) ~~The multi-wavelength optical communication system of claim 1 in which said~~ An intra chip or intra multi-chip module on a shared substrate multi-wavelength optical communication system comprising:

a number of emitters each of which emits radiation at a different wavelength;

a plurality of detectors each of which senses radiation at a different wavelength

corresponding to the radiation from one of said emitters; and

a shared waveguide including a scattering medium configured with dispersive particles for transmitting emitted radiation to said detectors;

wherein each emitter includes a reflector for redirecting the emitted radiation laterally through said shared waveguide.

10. (Original) The multi-wavelength optical communication system of claim 1 in which said emitters and detectors are disposed in a generally planar array.

11. (Original) The multi-wavelength optical communication system of claim 10 in which said shared waveguide is generally planar.

12. (Original) The multi-wavelength optical communication system of claim 1 in which said emitters and detectors are disposed on a chip.

13. (Original) The multi-wavelength optical communication system of claim 12 in which said chip is gallium arsenide.

14. (Original) The multi-wavelength optical communication system of claim 1 in which said chip is flip-chip bonded to a silicon chip.

15. (Original) The multi-wavelength optical communication system of claim 1 in which said shared waveguide is disposed on an integrated circuit chip to provide intrachip communications.

16. (Original) The multi-wavelength optical communication system of claim 1 in which said shared waveguide is disposed part on one integrated circuit chip and part on another integrated circuit chip to provide interchip communication.

17. (Currently amended) ~~The multi-wavelength optical communication system of claim 1 in which~~ An intra chip or intra multi-chip module on a shared substrate multi-wavelength optical communication system comprising:

a number of emitters each of which emits radiation at a different wavelength;
a plurality of detectors each of which senses radiation at a different wavelength
corresponding to the radiation from one of said emitters; and
a shared waveguide including a scattering medium configured with dispersive particles for
transmitting emitted radiation to said detectors, shared waveguide includes and a
reflective medium for containing the scattering radiation.

18. (Original) The multi-wavelength optical communication system of claim 17 in which a reflective medium is a lower index of refraction from the waveguide.

19. (Original) The multi-wavelength optical communication system of claim 1 in which said shared waveguide is disposed part on a plurality of chips mounted on a common substrate to provide interchip communication.

20. (Original) The multi-wavelength optical communication system of claim 1 further including an opaque barrier for absorbing the radiation.

21. (Cancelled)

22. (Currently amended) ~~A multi-wavelength optical communication system comprising:~~

~~a number of emitters each of which emits radiation at a different wavelength;~~
~~a plurality of detectors each of which senses radiation at a different wavelength~~
~~corresponding to the radiation from one of the emitters; and~~
~~a shared waveguide for transmitting radiation from the emitters to the detectors, the~~
~~waveguide including a scattering medium configured with dispersive particles, The~~
multi-wavelength optical communication system of claim 17 wherein the shared
waveguide is disposed part on one substrate and part on another substrate, thereby
allowing communication between circuitry on the substrates.